Methicillin Resistant *Staphylococcus aureus* (MRSA) Bloodstream Infections (BSI)

For this report, MRSA BSIs are based upon positive MRSA lab reports from blood cultures and date of specimen collection and matched to hospital administrative claims data for date of admission.

- Community onset = specimen collected within 72 hours (3 days) of admission and likely to have been present on admission.
- Hospital onset = specimen collected greater than 72 hours (3 days) from admission and potentially a hospital acquired infection (HAIs).

- **2008 Annual MRSA BSI Summary Report : January - December**

    - Bloodstream infections = **1,036 total** MRSA infections reported on 977 individuals
    - *Inpatient admissions or emergency department visits: **845** specimens collected
        - **220** of 845 **collected (26.0%) hospital onset that are potential HAIs**
        - 625 of 845 collected (74.0%) community onset likely to have been present on admission

    * At this time, DHEC is implementing a validation process with record reviews. This process will determine if the community onset and hospital onset categories assigned to each infection by linking the two types of data accurately defines the infection category based upon the clinical record.

- ****2009 Six Month MRSA Summary Report: January –June.**

    - Bloodstream infections = 436 total infections reported on 423 individuals
    - **Inpatient admissions or emergency department visits: **349** specimens collected
        - **77** of 349 **(22.1%) hospital onset that are potential HAIs**
        - 272 of 349 (77.9%) community onset and likely present on admission

    ** The routine process for hospitals to submit complete administrative claims data to ORS may take several months. Therefore, the matched data for the last six months of 2009 is not available.

Reporting Requirements and Data Methodology

In 2008, the South Carolina Department of Health and Environmental Control (DHEC) made Methicillin Resistant *Staphylococcus Aureus* Bloodstream Infections *(*MRSA BSI*)* a laboratory reportable condition. For the Hospital Infections Disclosure Act, a MRSA BSI is defined as a hospital acquired infection when a blood culture collected more than 72 hours after admission becomes positive for MRSA.

DHEC collects MRSA BSI data in three ways: (i) Electronic Laboratory Reporting (ELRs), (ii) disease report cards mailed to DHEC, or (iii) reports entered directly through Carolinas Health Electronic Surveillance System (CHESS). ELRs import directly into CHESS, and results submitted by disease report cards are manually entered into CHESS.

Once the data are in CHESS, a query is run that looks for all MRSAs that have blood listed as the specimen source. Blood specimen source options for MRSA are whole blood, arterial or venous, and very rarely cord blood. Many times, there will be several labs for one person, but that does not translate into a person having multiple infections. If there are fourteen (14) or more days between the first blood draw and the subsequent blood draw, then the latest blood draws are counted as a new infection (event). For example, if a person has their first lab drawn on January 1st and another January 6th and a third one on January 9th, those are all considered the same event and not counted as multiple events. However if a person has their first lab on January 1st and another January 6th and a third on January 27th, the person would be listed as having two events.

After all of the MRSA BSIs have been pulled from CHESS, DHEC gives the file to the Office of Research and Statistics (ORS), where data from DHEC is run through the ORS unique identification system to obtain a unique identifier for linkage to health databases. Unique numbers replace personal identifiers and enables staff to "link across" multiple providers and settings while protecting confidentiality. The data linkage project was approved by the South Carolina Data Oversight Council. The ORS health databases include hospital uniform billing data for inpatient admissions, emergency department visits and outpatient surgeries. The ORS searches health data for encounters one year before and after the event date.

Once the data has been matched, ORS determines whether or not the MRSA BSI is a possible hospital onset or a community onset infection based upon the category definitions described above.